THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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COMING MEETINGS

Next week will be a busy one with many members of the profession. On Tuesday and Wednesday the National Veterinary Association meet at Doncaster under the Presidency of Professor Axe. On Thursday a Quarterly Meeting of Council of the R.C.V.S., is to be held, and the proposals for a new charter form part of the agenda to be considered.

THE NATIONAL

At the "National" meeting at Doncaster, the first day (Tuesday) is devoted to a discussion of Professor McFadyean's paper on Tuberculosis. The discussion will be opened by Dr. Fleming and a very interesting addition to our knowledge of the subject is anticipated. Next follows Professor Penberthy's paper on 'Black-quarter,' which is sure to draw some experience of the various vaccins and other forms of preventive treatment. On the second day Professor William's paper on Influenza will be considered and the recent serious outbreak is sure to produce a good discussion. All the papers are now in the hands of members and all are exceptionally good papers. If we are favoured by fine weather the Doncaster meeting promises to be one of the most successful we have had. It is impossible to over estimate the value of this Association if it be only properly conducted and if members assist with a will. A good attendance is very desirable, and those men who will not speak must not forget that an audience is quite as necessary as speakers. At Doncaster men from every district will assemble, and the social re-unions are not the least pleasurable part of the annual meeting. The dinner is on Tuesday evening, and those who have not yet paid their subscriptions need not fear to face the Treasurer, who is a most patient and forgiving official. Let no excuse detain any member who takes a proper interest in the welfare of his profession.

THE CENTRAL V.M.S. DISSECTION PRIZE.

Some months ago the Central Veterinary Society, offered a prize of £5 for the best dissection of the fore leg of a horse below the knee—either showing vessels and nerves, or ligaments and tendons. The competition was open to every school and every competitor would have returned to him his subject. Not a single student from any one of the four schools sent a leg, and it is worth asking why? Is dissection really an art of the past or is there some decent explanation for what appears to be a sign of degeneration. Surely every school possesses some student who might have forwarded one of his ordinary class specimens and earned the prize. We do not expect the Society will again trouble itself to stimulate the study of practical anatomy, and we much regret that their well meant offer has been treated with such utter apathy.

THE COUNCIL AND THE EXAMINATIONS.

At the coming meeting of Council the chief subject for consideration will be the proposed New Charter, but it is rumoured that some time will be devoted to the methods of examination now applied to candidates for the diploma. No subject can be of greater importance, but it is difficult to understand what good can arise from a promiscuous discussion. If the examiners wish the matter to be considered, and if the schools are agreed that some enquiry should be undertaken, it would be a pity to miss the opportunity. The only way to arrive at a practical conclusion as to the best method of examining is to appoint a strong committee of the Council who will consult with the teachers and the Board of Examiners. Every interest must be represented, but no single one must be in a position to unduly forward its own special desires. Probably any enquiry which may take place will result in the imposition of a written examination. If so, it is to be hoped such a test will not be confined to the final examination, but be applied first to the juniors, then to the second-year men and finally to the pass-examination. Everyone is agreed that a written test is necessary, and that it would do justice to the candidates, many of whom are unable to shine at a *viva voce*, although well up in their subject.

ABSENCE OF DISEASE IN THE METROPOLIS.

There is a sort of satisfaction in knowing that other people suffer as well as ourselves. If every district in Britain is as free from disease amongst animals as the metropolis, stock-owners must be very much more pleased than veterinarians. Every practitioner in town complains that the last two months have been unsatisfactorily healthy. Since the outbreak of influenza disappeared, or dwindled down to the usual constant number of cases which are classed as "colds" or "influenza," according to the notions of the observer, we have had no disease of any consequence—not enough even to supply the wants of the knackers' yards.

DIPHTHERIA AT EAST CROYDON.

The British Dairy Farmers Association occupy quite a unique position in this country. They have not only to look after improved methods of cheese and butter making, but are the only body that can be depended on to supply some check to the vagaries of the Medical Department of the Local Government Board. For some years past it has been the fashion whenever any epidemic is discovered to trace it to "an eruptive disease of the udders of cows." This sort of investigation now comes easy to a medical officer of health, and the Local Government Board are always satisfied when their officer has "spotted" a dairy as the *fons et origo* of any outbreak of disease.

Ever since the memorable year in which scarlet fever was discovered to have been generated from an eruptive disease on the udders of cows in a dairy at Hendon, the milk-consuming public has been treated to some new scare whenever a contagious disease has spread rapidly amongst human beings. Typhoid fever has been connected with swine-fever, scarlet fever with cow-pox, diphtheria with "an eruptive disease," etc., and probably the next outbreak of small-pox or measles will be traced to glandered horses or to dogs with distemper. It seems almost a pity that foot and mouth disease has been exterminated, for its possibilities of "assimilation to the diseases of man" are really great, and might have done so much for the higher scientific pathology. Unfortunately for science (so called) the British Dairy Farmers Association has a notion that before a trade is ruined, and its members driven either into bankruptcy or the lunatic asylum, some proof should be given of the damaging theories concocted against dairymen. Happily they bethought them of their consulting veterinary surgeon—Prof. Axe—and decided that in the interests of commonsense and truth, he should be delegated to report on the epidemics alleged to be produced by the cow.

The last big craze of the medical officers has been to find that diphtheria arises from some eruptive disease of the udder of the cow. Verily, the cow's udder is a wonderful thing! It produces any disease that may be required, with as much ease as the wizard's bottle which supplied consecutively milk, whiskey, Epsom salts, and petroleum as required. The cow only wants an eruption on its udder to manufacture any serious epidemic that may happen to be wanted. If a district suffer from diphtheria—find the cow. If scarlet-fever prevails—find the cow. If whooping-cough be epidemic, go examine the udder of the placid cow. Clinical research always finds the connection, and is able to establish a clear case of cause and effect. *Pace!* the old saw about Tenterden Steeple and the Goodwin Sands. In these *fin de siècle* days, however, clinical observation is nothing till the bacteriologist has corroborated, and so whenever an eruptive disease of the udder of cows has been detected in causing some old disease of man we await the confirmation by "pure cultures" and experimental inoculation. We never have long to wait. With unerring certainty we are soon supplied with beautifully-coloured drawings of some sort of bacillus or coccus which is found in the cow, in the cultures, and in the human disease. What more can the greatest sceptic require? Koch's postulates are complied with, and science is satisfied. The British Dairy Farmers Association seem to imagine that Koch might have added one more postulate, viz., that the results obtained by one man should be easily obtained by other careful workers. The British Dairy Farmers Association are not scientists or they would accept without question the results of every investigation conducted in a bacterological laboratory with the simple faith of a little child.

The remarks are drawn forth by the perusal of "a report of an epidemic of diphtheria at East Croydon, by Professor Wortley Axe," and our own recollection of similar investigations. The facts are, that diphtheria prevailed at Croydon in 1890 from some time in September to the end of December. In the course of the epidemic 124 houses were attacked, 191 persons became stricken with the disease and 38 died. Dr. Philpot, the Medical Officer of Health, traced a connection between the spread of the disease and the milk from a certain farm. The milk from the farm went to two dairies and was then distributed over the town. One dairy sold no other milk, and 40 per cent of the houses supplied were invaded by diphtheria. The other dairy received milk from different sources but sent it out as it arrived without any system of mixing; about 10 per cent of the houses supplied were invaded with disease. So far Professor Axe and the Medical Officer are agreed that diphtheria was spread by infected milk, "but in what way the milk acquired its infectious quality" is the point where they diverge. Here it is that bacteriology comes to the rescue, and Professor Klein inspects the cows. This gentleman has had considerable experience with the micro-organisms of the domestic animals. He it was who discovered the scarlet-fever organism in the cow's teats at Hendon—an organism afterwards shown by Prof. Crookshank to be common to many diseases, or perhaps to all in which certain septic changes have taken place. Dr. Klein also, it will be remembered, made a long investigation into swine-fever, the result of which was that Pasteur and Klein flatly contradicted each other, whilst McFadyean and Woodhead declined to accept the results of either authority. Well, Dr. Klein inspected these cows at Croydon and to him belongs the credit of having discovered that "the infection was imparted to the milk by the eruption on the teats of the cows." Space will not permit us to quote much from Prof. Axe's report, so we will be content with his conclusions.

Of the eruptions he says, "It did not, and could not have taken part in originating the epidemic, for it had no existence until more than a month after the appearance of the outbreak." It seems to us, that granted the fact, the conclusion is inevitable.

Again, it is stated, "As matter of fact no eruption existed on any cow until the last day of October, and had it been present as alleged on September

25th, it is hardly likely that any result would have been seen in the recipients of milk in the short space of twenty-four hours; besides, if the case which occurred on the 26th was due to the eruptive disease of the teats it is difficult to understand why during the following twenty-six days only two other cases occurred in the suspected milk-service, while during the same period no less than six houses suffered in various parts of the town, while deriving milk from other sources." Here is another statement of great interest: "After November 3rd, when the suspected milk ceased to be sold for human consumption, it was fed to pigs and calves without producing any ill effects."

In conclusion Professor Axe thinks it necessary to seriously correct Dr. Philpot, who imagines that "the highest veterinary authorities" consider eruptions on cow's teats to be the result of bites from the calves or chaps or cracks caused by cold and handling. We may perhaps be allowed to add that all the highest bacteriological authorities are not yet quite agreed that the cow suffers from an indefinite number of specific udder eruptions, each of which is capable of giving rise in human beings to some contagious, well recognised and serious malady, but which never effects the family or servants of the dairyman.

CASES AND ARTICLES

CONCUSSION OF THE BRAIN IN A DOG—OPERATION: RECOVERY FOR SIX MONTHS: SUDDEN DEATH.

By W. MOLE, M.R.C.V.S., Hamilton, Ont., Canada.

Mr. Alexander Duncan, a resident of this city, brought an English bull terrier to my office on December 5th, 1890 as there was something the matter with one of his hind legs. On examination I could not perceive anything amiss, except that he dragged the off hind leg along the ground on the nails. I enquired if he had been injured by a stick or stone on the head. Mr. Duncan said that he fell on his head from a hay loft on the Sunday previous, but he did not think "Belcher" (the dog's name) had injured himself then. During this conversation the dog rolled over in a spasmodic fit, dilation of the pupil, muscular spasms, and rigidity of the limbs following in quick succession. A douche of cold water on the head brought the animal round, but he was then completely paralysed in his hind quarters; the mouth and eyes on off side were drawn, showing his teeth, with elevation of nostrils.

After some consideration as to probability of recovery an operation was decided on, which was carried out as follows:—

A crescentic incision was made, beginning at the median line, and continued to the base of occiput, at the root of the external ear; the whole of the muscle was laid back; the skull was pierced, and a circular piece of bone, a quarter of an inch in diameter, removed.

To my astonishment there did not appear anything abnormal present. I passed the needle of the subcutaneous syringe into the substance of the brain, but failed to get any pus. Whatever pressure there was on the brain was relieved, the animal became conscious, and recognised his master. The wound was then secured by six stitches, and a piece of drainage tube inserted, bringing the end out between the eyes.

The following day the animal became again unconscious, howling and moaning, day and night. As food I gave an egg, beaten up in a little milk. As medicine a quarter-grain tablet of calomel and a dose of morphia at night. In all, six doses were given until the bowels were freely opened. The wound discharged freely, and was dressed with carbolic acid and bichloride solution on antiseptic gauze.

Dec. 7th, 8th, 9th and 10th,—Symptoms much the same, with less pain, as the cries of the dog were only given at intervals.

On the 11th of December the dog was much better, sat up on his haunches, and ate a small quantity of bread and milk—the first voluntary feed.

The wound was dressed with carbolic liniment; the drainage tube removed, cleansed, and returned to the same opening, about half the distance. From this date the dog made a good recovery, and was discharged cured on May 6th, 1891.

About three weeks elapsed before my seeing Belcher again, when he came and expressed his pleasure by wagging his tail, and stayed the whole day, playing with the children. I returned him to his master, and he then became a constant visitor, staying a day or two at a time, and returning to his own home as he liked. He would often come and stay round the whole day playing with a beagle puppy, and protecting him from the other dog.

I had noticed lately that he had not been quite so much disposed to fight, and that he could not hold his own as he used to do, and we thought he was more peaceably inclined.

On June 1st he came to my house late at night, pushed the door, and rattled the window shutter. I went, and saw Belcher holding up his near foreleg, and as he hopped into the dining room the blood dripped from a wound under the fetlock claw. I dressed and bandaged the wound, and kept him overnight. Next morning he disappeared, and I did not see anything of him for a couple of days.

June 17th.—Belcher came, and hid himself in the kitchen—his usual sleeping place. The next day my wife said: "I wish you would see what is the matter with Belcher. He looks very ill, and is covered with dust and mud; I believe he has been fighting."

June 19th,—Friday morning, about 7 a.m. I heard a commotion of something tumbling around in the back kitchen, and presently a loud noise of a falling can. I instantly when out, and saw Belcher lying on his back in a fit. I took him by his legs, and plunged him into a tub of cold water, which seemed to revive him, but I could see that he was doomed to die. I gave notice to his master who came about nine o'clock, and the dog passed away unconsciously about noon.

Post-mortem.—I removed the head from the carcase, and opened the skull. I found the left hemisphere of the brain very much congested, a small clot of blood immediately beneath the old injury, which had completely healed over, and bone was in progress of deposition.

I have no doubt that the immediate cause of death was rupture of the middle meningeal artery, and the pressure of the blood between the *dura mater*, caused by the excitement of fighting.

I hope to have the opportunity of sending you the skull for preservation, as it rarely happens that one can follow a case, and see the termination as in this one.

The dog, "Jack," the property of Miss McSeverin, that I operated on for a similar injury, is running about the city quite well. I think you will find it reported in one of the June numbers of *The Record* last year.

A DOUBLE-EDGED FIRING IRON.

By Fred Smith,
Professor in the Army Veterinary School, Aldershot.

The following short account of a double-edged firing iron may be of some use to your readers.

I think I may safely say that a fired leg does not improve a horse's appearance, but a badly-fired one is a positive eyesore. The object of a double-firing iron is to ensure accuracy. every line is made the same distance apart, and the effect is very pleasing, (?) the whole being produced with mathematical accuracy.

I can only describe the instrument as two firing irons laid side by side, and made in one, the distance between the edges being a little over half an inch, or more or less depending upon the views of the operator as to whether he prefer his lines close or wide apart.

The iron is simply used for mapping out the geometrical figure we purpose describing, the actual firing being performed over these lines with the ordinary iron, and in the usual manner.

I have used such an iron for some time, and I think those who fire seldom and want to do it neatly would find the double iron of value.

The idea is not original, Capt. Hayes, M.R.C.V.S., told me of it some time ago, and I think he learned it from another member of the profession.

The J. H. Steel Memorial.

By direction of the Chairman (Mr. J. Roalfe Cox) a meeting of the Working Committee of this Fund will be held at 10 Red Lion Square, at 4 p.m., on the 24th July.

F. Raymond, *Hon. Sec.*

Agenda.

To receive the Treasurer's provisional report: to receive the Hon. Secretary's report: and to discuss any other business connected with the Fund.

VETERINARY SOCIETIES.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

*An Enquiry! What has Contemporary Veterinary Science done towards the Advancement of the Healing Art, and wherein is there scope for further Development?

By J. Sutcliffe Hurndall, M.R.C.V.S.

(Continued from page 17).

Of course I am not in a position to affirm that the objections I have raised against so-called preventive inoculation for anthrax and black-quarter will convince you, as they do me, of their uselessness; but, whether or no, I am perfectly satisfied, that, conducted as they now are, all these experiments are so much waste of time, energy and property—and the only end they serve is to make our profession look ridiculous in the eyes of the lay public. I now pass on to the next Bacteriological failure; namely, Dr. Koch's cure for consumption: I should think it requires very little, if any, argument to convince every one in this room that Dr. Koch, like Pasteur with his pretended cure for rabies, has, unfortunately for science, done more towards spreading tuberculosis than arresting its fell progress.

There appears to be little doubt, that not one true case of pulmonary tuberculosis has been successfully treated by Koch's system of inoculation; it is said that some cases of lupus, have been temporarily benefited thereby; but lupus, it is also said, is not tuberculosis in any form. Professor Virchow, as my friend Dr. Clarke says in the March number of the Homœopathic world, appeared on the scene as the candid friend, and he showed that if Koch's fluid could not cure, it could at any rate kill in a variety of new, certain and original ways. Moreover, in the same article, Dr. Clarke makes the following very damaging assertion; viz., "Virchow is not alone in his opinion. Now we have Mr. Jonathan Hutchinson stating that lupus is only very distantly related to tubercle, if at all; that Koch's fluid may improve some cases, but it never completely cures any, and that in some cases, so far from doing any good, it does a great deal of harm." What is the effect of this fluid; so far as I have been able to discover, its chief action is to produce "violent fever, intense pain and irritation of the affected parts in tuberculous subjects, while in healthy or non-tuberculous subjects no effect or a minor degree of febrile action follows the injections;" in other words in those cases where the disease really exists, it becomes exaggerated, and in those where it is not present little or no effect is produced. Such experimentation as this is bad enough when animals are the subject of it, but personally I would rather be excused from the operation, even though I were the subject of pulmonary phthisis; it would be much more in accordance with my faith and more creditable to my common sense to rely upon a scientific system of therapeutics for relief, like Hahnemann's or the homœopathic system of medicine if you so prefer to designate it, than to run the risk of being suddenly dispatched, *nolens volens*, to another world by Koch's fluid. In another article which appears in last January's issue of *The Homœopathic World* the following scathing remarks appear: "The injections of Dr. Koch probably recommend themselves to the favour of our allopathic colleagues on account of the violent effects

* Read at the Meeting at Didcot, June 26th.

they develop in their victims, so like the action of many of their own remedies. These effects have frequently proved fatal to the patients, and we read in the papers that Koch himself was much affected by the rapid death of a patient whom he had himself injected, and whose death he confessed was due to the injections. As we write the newspapers inform us that the attempt to manufacture the marvellous lymph on a large scale was a complete failure and that the supply has now come abruptly to an end. This is probably the best thing that could have happened, and we shall doubtless be informed presently that no more can be made, and the secret of its composition and manufacture will of course be with-held by Koch, for if he cannot succeed in making a fresh supply it is hardly likely that he will be able to tell others how to make it. As deaths have been numerous and cures have been awanting with the original fluid, it will possibly be announced that the secret of its preparation has been lost, and after the short gush of wild enthusiasm over it, it will soon be forgotten or remembered only as a delusive dream. The latest news does not countenance this prognostication, for we are told that Koch has agreed with his Government for the handsome sum of One Million Marks to superintend the manufacture of his magic fluid on a large scale, whereby the Government hopes to make a clear annual profit of four million of marks. If this is true alas for poor medical science:" I submit to you, Gentlemen, that if no more successful results are attainable in the protection of human and animal life against the assaults of disease than Messrs. Pasteur, Koch and others have realised with their inoculation experiments, the sooner they discontinue their efforts in this direction and look out for something more practical and useful, the better for science, the better for the scientist and the better for the poor unfortunate animals that are made to do duty in experimentation. In concluding my remarks upon this part of my subject, I beg to quote the following from the same article, in *The Homœpathic World*, that I have already drawn upon, as the remarks strike me as being particularly apropos; "The latest novelty in hypodermic therapeutics is the discovery by those eminent bacteriologists, Behring and Katasato (all bacteriologists are eminent and illustrious) that the blood serum of certain animals which have a natural or artificial immunity for diphtheria and tetanus will preserve others from these diseases to which they are otherwise liable. Thus they have found that the blood serum of rats which possess immunity against diphtheria—which we can well believe, otherwise they could not live in sewers—when injected into guinea-pigs which are eminently susceptible of diphtheria, gives these latter animals perfect immunity agninst that very fatal disease; and that the serum of rabbits artificially rendered immune against tetanus when injected into other animals susceptible of tetanus protects them from that malady. This principle opens out a vista of protective inoculations. Thus we know that many persons are apt to catch a cold if they get their feet wet. Now a heron may be considered immune against that malady from this cause, as we know that it will stand for hours with its feet immersed in cold water without ever catching cold in its head, so its blood serum, if injected into human beings, ought to enable them to resist the catarrhal influence of wet feet. The frog, though constantly exposed to cold and damp, defies rheumatism, therefore its blood must prove prophylactic of this disease to persons liable to rheumatism. Moles have never been known to contract measles, nor badgers whooping cough, so their blood will furnish us with prophylactics for these diseases, and so on. There seems to be no reason why we may not discover in the blood of our humble fellow-creatures protective remedies for all the thousand ills that flesh is heir to." The writer of these remarks was evidently actuated thus to ridicule the latest discovery of the illustrious bacteriologists therein referred to, from the fact that two scientific men should in all seriousness proclaim abroad theories of such an unpractical character; and there is no wonder when you find professional men of undoubted scientific attainments wasting their precious lives over such childish investigations that a feeling of contempt should arise in the minds of thoughtful and serious men, such as I well know the writer of that article to be. I am not at the present moment in a position to give you exact statistics respecting the failure of Koch's cure for consumption, but I can tell you that they are in course of preparation, and from what I hear, there is every probability that they will turn out well-nigh as serious as those which I have submitted to your notice anent Pasteur and Rabies. You are, no doubt, all well aware that the "Koch fever" as the enthusiasm about the discovery has been somewhat pertinently described, has been gradually passing away; we see little or nothing of it or about it in the papers now, unless it be an occasional cure, (?) It is not unreasonable to ask how this comes about? the answer to which no doubt is, that the experiment has not come up to expectation; and like most of the bacteriological experiments which preceded it—notwithstanding that a specific organism has been discovered—it has proved a lamentable failure. Well! in the face of all these scientifiic disappointments, one naturally enquires what is to be done? Certain diseases have been proved to possess living germs—specific organisms which are characteristic of themselves; to the experienced eye the one is either discernible from the other by its shape and form or by the special staining material which is peculiar to its absorption—and by a very large number of scientists it thought that these living organisms, bacteria, bacilli, &c., are the real source of infection of the diseases to which they are peculiar; upon this vexed question however I do not propose to open a discussion as it does not come within the scope or limits of my subject.

I have endeavoured thus far to show what advances have actually been made by contemporary veterinary science with a view to render the healing art more essentially practical and useful; and I have also given very free expression to my estimate of the worth to veterinary science in promoting the healing art of that branch of the science which has received most time and attention of late years from those men who are looked up to as leaders of the scientific world; and it cannot be affirmed by any possible stretch of the imagination that my estimate of the worth of the work done is set down at a very high value. It is, however, possible and also very probable that my opinion on these matters will in the eyes of the majority not go for much, hence my reason for drawing so freely upon the writings of others in the several quotations I have introduced. It may very truthfully be said of myself that scientifically I am a nobody; but of the various authors and writers from whose valuable literary efforts I have quoted so freely the same cannot be averred; they are all men of standing and experience in the literary and scientific worlds, and as such their opinions are deserving of the highest consideration and respect.

The views I entertain, in which I am confirmed by these gentlemen who are far better qualified to judge than I am, are altogether unfavourable to any claim which contemporary science may make as to anything she has done towards the advancement of the healing art, therefore I shall now proceed to enquire if and wherein there is scope for further development? which is a somewhat roundabout and indirect method of enquiring whether there is any known system which offers any decided advantage over prevailing methods and customs. To this enquiry I answer most emphatically, yes! there

is!! And what is more, I answer thus confidently from experince gained in daily practice ever since I became a member of this Profession, amongst all kinds of animals of the domesticated orders. If for form's sake, you ask me what is the system I rely upon, many of you will anticipate my reply when I state, it is that scientific system of therapeutics discovered, and introduced to the word by Dr. Samuel Hahnemann, which for the sake of distinction, he designated homœopathy. Now! to be perfectly candid, I am not going to assume for one moment that any one in this room among my professional *confrères* really understands what that science is; what is more I am sure they do not; if they did they would practice it and no longer trust to the empirical and unscientific manner of drug selection practised by the old or Allopathic School of medicine which profeses to be guided by the "traditions of the Fathers" while the new or homœopathic school depends upon a "Law of Nature." I am free to admit that homœopathy involves much hard work and careful thought to determine what drug is the proper one to select according to the Law of similars. Your slap-dash method of oh! he wants a physick ball, or an astringent, or a stimulant, or an emetic, or a narcotic won't do for the homœopathist; he has to study carefully in every case all the symptoms that the patient presents, and also hunt up many that on the face of it appear quite foreign to the pathological conditions which are suggested by first sight impressions, until from a totality of such symptoms he discovers that he has a picture of the pathogenetic properties of some particular drug; all this takes time, and makes a great demand upon the patience, but the success which follows the labour and the time and the patience will abundantly reward you, as witness the case of the Saint Bernard I reported in last week's *Veterinary Record*. In Surgery and in Hygiene the old and the new schools are at one; what then are the distinguishing characteristics of each? "They differ in the use they make of drugs, in the manner of using drugs, and the quantity of the drugs they introduce into the patient's body."

This is the definition given by Dr. Hayward of Liverpool—and is one with which I fully concur.

I wish to make myself fully clear as to the true meaning of this system for which I claim so much, and to do so most effectively will endeavour to compare the difference between the system you rely on, namely, allopathy, and that which I rely on, namely, homœopathy. If you pull the word allopathy to pieces, we find it is made up of two Greek words *allos*—another; and *pathos*—disease. So an allopathic practitioner uses drugs that set up a disease "either on other parts of the body than those that are affected, or if on the same parts act in a different way or opposite way, whilst homœopathic practitioners use those drugs that not only act upon the same parts, but act in a similar way to the disease itself." Now by way of illustration let me ask; what do you do in the majority of cases when called in to prescribe for a horse; if it is not absolutely dangerous you more often than not prescribe a physic ball or purgative; and in so doing you for the time set up a temporary diarrhœa, or in other words another form of disease. In reading the report of the discussion on Dr. Fleming's paper on Menière's disease I observed that one gentleman considered he had seen the disease in several horses, and he informed his audience that he usually administered a physic ball at first; pray why did he so do, may I ask? Has experiment on the animal or in the laboratory ever shown that aloes have the slightest influence on the labyrinth of the ear; if not why prescribe aloes and so set up a temporary disease in another part of the body; such treatment as this does not strike me as having any claim to be designated scientific?

Dr. Hayward in his clever brochure, explains how medical allopaths act, and it seems pretty much on the same lines as Veterinary Surgeons, I will therefore give you his words, for they are far more impressive than my own; he says, "If a patient has had some anxiety or over mental work which has produced headache, instead of giving him a drug that acts directly or specifically on the brain or its vessels which have been exhausted or dilated by the anxiety or over work, allopathic practitioners give him a drug that acts on the bowels—a purgative—which gives him a temporary diarrhœa into the bargain. If an infant by taking cold gets croup, instead of administering a drug that acts on the windpipe (which is the part inflamed) allopathic practitioners give emetics which act on the stomach and produce vomiting. If by taking cold an adult gets inflammation of the kidneys they give him purgatives, which give him diarrhœa as well, or sudorifies which induce excessive or morbid action of the skin—sweating! The theory is that by producing these medicinal diseases, that is setting up disease in other parts they divert the natural disease to less vital parts—veritable allopathy. The power of drugs to produce disease, that is to morbidly force on, suppress or pervert the natural actions of the body is that for which allopathic practitioners use them. And for this purpose they classify drugs according to the morbid action they produce—as stimulants, astringents, alteratives, emetics, purgatives, diuretics, narcotics, and so on."

Suppose a patient, whether animal or human being, suffers from constipation, what is the first thing an allopathic practitioner does? Why, instead of trying to find out the cause of the constipation by making a careful enquiry into the customs, feelings, symptoms objective and subjective of the patient, and giving a medicine to cure the cause by going directly to the seat of disease, he immediately administers an active cathartic, and so produces the exactly opposite disease. In cases of bronchitis and pleurisy the common practice is to apply a mustard or some other blister to the thorax, and not infrequently the application of the vesicant is so effectual that the patient is marked for life; this is setting up another disease with a vengeance.

These illustrations, Gentlemen, are well-known to you, they are common, every-day practice with you; but upon serious consideration do they strike you as scientific methods of procedure? If they do, you are more easily satisfied than I am? To quote Dr. Hayward's opinion, "the best apology that can be given for such roundabout, rough and ready, unscientific, uncertain practice is that in some instances it does appear to substitute a more temporary or less dangerous medicinal disease for perhaps a more permanent or more dangerous natural disease, whilst nature herself performs the cure of the original disease."

This is certainly a very severe stricture upon the practice of the orthodox school, but not more severe than it deserves; you, as allopaths, have been shown a better way, but you wilfully close your eyes and will not see.

For years it has been admitted by eminent men that the practice of medicine is in a state of confusion and contradiction. Dr. Adams (the learned translator of Hippocrates) says "one cannot think of the change in professional opinion since the days of John Hunter (at the close of last century) without the most painful feeling of distrust in all modes of treatment." And again the same writer says "Now-a-days we have abandoned all general rules of practice, and profess to be guided solely by experience; but how variable and uncertain are its results." More recently to show you that things are no better with the allopathic school, Dr. Gairdner, Professor of Medicine in the University of Glasgow, when discoursing before the Ulster Medical Society last May, on "Old and New Remedies," must have been well

nigh driven to his wits ends, I should think, when referring to the uses to which mercury has been put, he said that at one time it had been praised to the skies as a sort of cure all, and after that denounced as "no remedy at all, but simply and absolutely a poison and the source of almost all that was most virulent and disastrous in the diseases for the cure of which it was employed." And again in the same address the learned gentleman says "It must at least be admitted that in the endeavour by individuals to settle definitely the position of any one very largely employed and very active remedy centuries have been consumed, not perhaps quite fruitlessly, but still very unsatisfactory in perpetrating frightful abuses of which all of us are now with good reason ashamed, and which stand on record as among the worst opprobria of the healing art. In order to reach even a moderately safe, not to say efficient or stable position in the therapeutic employment of this one powerful drug, we have been obliged to sacrifice, on the altar of individual effort, hecatombs of victims and to stumble along painfully through centuries of delusion and mischievous blunders, not to say quackeries, in the search for only a few grains of solid truth." What an admission! There is no doubt it is down-right solid truth, but what a confession? Don't you feel proud after that, that you belong to the dominant allopathic school, and will you not honestly endeavour to find out for yourselves whether or no there is a scientific law in nature to guide you in the medicinal treatment of your patients.

Dr. Gairdner is, as you are probably aware, a learned Professor, therefore the opinions which he holds concerning the lamentable state of chaos existing at the present time in the allopathic school where the selection of drugs is concerned, will no doubt command itself to your judgment and attention.

(To be continued.)

CENTRAL VETERINARY MEDICAL SOCIETY.

The ordinary monthly meeting was held at the First Avenue Hotel, on Thursday, July 2nd, 1891, the President, Mr. Sampson, in the chair.

Mr. WRAGG moved that the minutes be taken as read, which was seconded by Mr. Hurndall, and carried.

The SECRETARY, Mr. H. G. Rogers, read letters from Messrs. A. Broad and S. Villar, thanking the members for electing them Honorary Fellows.

A letter was next read from Mr. Hepton, of Sherburn, Yorkshire, who stated that he had been nearly ruined by an illness and asked for assistance to tide over the heavy loss he had sustained.

The CHAIRMAN remarked that it would be interesting to know whether this case had been before the Yorkshire Society. On the proposition of Mr. Edgar, seconded by Mr. Raymond, it was agreed that the secretary acknowledge receipt of the letter and communicate with the Yorkshire Association.

A post card was read from Professor Walley regretting his inability to attend.

A specimen was forwarded by Professor Shave, and in the unavoidable absence of that gentlemen it was agreed to consider it at the October meeting.

The following names were submitted for election at the next meeting:—Stephen Edward Holmans, Lee; T. G. Garry, Clapton; Albert Wheatley, Reading; W. A. Wright, 95 Abbey Road, St. Johns; W. Matthews, Royal Horse Guards, Blues.

The next business was the appointment of delegates to the Congress of Hygiene and Demography.

The CHAIRMAN said at the same time they could consider what sum they would subscribe towards the funds.

Mr. HURNDALL proposed that the Council should be recommended to contribute £5. Mr. WRAGG seconded the proposition which was carried.

The following were then unanimously appointed delegates:—Mr. Raymond, Prof. Penberthy, Mr. Hunting The President, and the Secretary.

Mr. WILLIS here submitted a specimen in the shape of a fractured rib. He said it was the first rib on the right side of a harness horse which fell down in Bishopsgate Street, on the 16th May. He partially got up again and then lurched forward, not being able to walk for excessive lameness. When he saw him the same day the whole of the right fore limb was hanging down The scapula and the whole of the upper part of the limb were below their normal position. The weight rested on the toe of the fore foot; when compelled to move the elbow descended, and the limb gave way and seemed totally incapable of bearing a weight upon it. On the Thursday following the 16th May the horse was destroyed. When it was killed it was suggested that the lameness was due to the sprain of the triceps muscle. He thought there was a similar case some time ago when some one suggested that the rib was fractured in slaughtering. In slaughtering this horse he took the precaution of tying the animal's head up. He thought they would see from the specimen that the fracture took place some time before the animal was killed, because the ends were worn.

The CHAIRMAN said perhaps gentlemen there would give them some information respecting similar cases.

Mr. HUNTING said he was afraid he was partly to blame for having suggested that the fracture of the first rib in the case just alluded to might have occurred in poleaxing. He certainly had heard it from horse slaughterers, who recognised it as an injury that did occur in their work. Mr. Willis's account itself showed that it might occur in slaughtering. If he could fracture a rib in the street why could it not occur in poleaxing? This was not a new case. In the other case the fracture was clearly not recent because there was a lot of bony deposit round the broken ends. These cases were extremely interesting as adding one more to the conditions generally known as shoulder lameness. Until Mr. Byerley reported his case—and he thought there was another before that—no one would have dreamt that these so-called shoulder lamenesses were due to the fracture of the first rib, and he was by no means certain, even now, that any man in that room would correctly diagnose the next case that he came across. It simply came to this, that they had three or four definite conditions which were now known as causing this dropping appearance of the shoulder.

Mr. WRAGG said the case which Mr. Hunting referred to occurred in his (the speaker's) practice, and it was singular that this case fell in Houndsditch, very close to the locality in Mr. Willis's case. In his case there was a fracture of both first-ribs, and the position of the limb was exactly the same as described by Mr. Willis. He stood a great deal better on the off leg than on the near, but he could bear very little weight on the near limb. He utterly failed to diagnose the case himself. Professor Pritchard saw the case one day, and gave it as his opinion that it was fracture of the fore rib.

Mr. HUNTING said he should like to known whether in these cases there was any quivering of the muscles just in front of the root of the brachii?

Mr. WILLIS said there was nothing of the kind in his case.

Mr. J. W. DOLLAR drew attention to the considerable rounding of the edges of the compact structure of the bone in this case. It seemed to him to point to the fracture having been in existence some considerable

time, as this condition was not brought about in a few days.

Mr. EDGAR asked whether the severe lameness was really due to the fracture of this rib, as the fracture must have been in existence some time. Was it absolutely certain that there was no other cause of lameness?

Mr. WILLIS said there was an injury to the small head of the triceps, but he could hardly think that that was the cause.

Mr. HURNDALL asked whether the horse had at any previous time been lame.

Mr. WILLIS said he had been lame in his feet all the time he had known him, but he never supposed him to be lame in the region of the shoulder.

Mr. WILLIS, in reply to Prof. Penberthy, said he had simply boiled the specimen and put it on a shelf. He had not applied the knife to it. Mr. Rogers saw the bone in its fresh state and it was polished then.

Prof. PENBERTHY said he really saw nothing but what was compatible with the fracture of the bone four or five days before the animal was killed. There was no evidence of any reparative process going on. If he were asked his professional opinion he said he should certainly say the fracture had taken place within a week. It was not the most compact part of the rib. Certainly it was rather smooth, but that came soon with handling the bone. He should think the rib might have been broken at the time of the accident mentioned by Mr. Willis. The absence of any attempt at repair was his reason for forming that opinion.

Mr. DOLLAR thought there was something to be said on the other side. He could not imagine that handling would round every portion of the bone, which was the case here. Further than that there was rather a peculiar thing about this bone. There was a fissure, and it was impossible to bring the fractured portions into apposition along this line. As to how it came about it was rather difficult to say. It looked very much as though this portion of the bone represented by the fissure had been completely absorbed, and that view was borne out by the fact that there was a marked absorption of bone at this part. For that reason he thought it was perhaps worth considering whether the accident might not have been the result of the previous fracture of the bone, as in contradistinction to the bone being fractured as the result of the accident.

Mr. RAYMOND asked whether there was any pus around the bone, and Mr. WILLIS replied in the negative

Mr. ROGERS said he saw this bone in its fresh state, and it showed exactly the same amount of polish then. He quite followed Prof. Penberthy that in a fracture of six weeks or two months standing there should be some attempt at repair. He understood that the horse stumbled, partly reared, and come down on the leg. It was an aged animal, and no doubt the bone was fractured at that time.

VARIOLA EQUINA.

By FREDERICK C. MAHON, M.R.C.V.S.

MR. PRESIDENT AND GENTLEMEN,

In introducing the subject of Variola Equina (Horse-Pox). Is it a recognized or prevalent disease in this country? to your consideration this evening, I feel the honour of being permitted to do so before such an assembly, but am fully aware that the many interesting points in connection with a study of the Variolæ as a whole cannot on this occasion be fully embraced, and I sincerely trust therefore that the many imperfections in this Essay may receive every indulgence at your hands. My objection in introducing the subject of "Horse-Pox" is two-fold;—to render some account of what is known to us of the subject, and while briefly comparing horse-pox with a few of the important affections with which it is more easily confounded, to gather from your varied experience some further knowledge respecting a disease, which to quote from medical authorities "has been and is still doubted, over-looked, or incorrectly diagnosed by Veterinarians in this Country."

Variola Equina—(Horse-pox)—has at different times been known also as Constitutional Grease, Loy's disease—German *Mauke*, French *Variole du Cheval*, Hindustance or Bengallee *Gootry—Goree Boshunto*. It may be defined as a specific, mild or intermittent fever, having in addition an eruption appearing on the skin and mucous surfaces; the result of the entrance into the system of a specific and palpable animal poison; which after a period of latency, passes through the distinct, and definite stages of fever, papular, vesicular and pustular eruption, to be followed by decline. Now the majority of observers state that equine variola is only propagated from Equine to Equine, or to other animals by direct contact. Others, especially American authorities, state that in their experience it appears volatile, as well as fixed, and that it is transmissable by cohabitation. This is in accordance with what is known to occur in connection with the variola of the other domesticated animals. In the transmission of the virus of the disease where the specific lesions are situated on the head and extremities, parts of the animal most constantly in contact with the fodder or litter, we may comprehend how readily an animal when placed where diseased animals have previously been located, will become contaminated. Placed in direct contact, either during work, or in the stable, or on pastures, there is little difficulty in the transmission of the disease. The virulent principle of horse-pox may obtain access to the system through the matter of the pustules coming into contact with the membrane of the nose, mouth, or eyes, or meeting any raw or abraded cutaneous surface on the limbs or other region of the body. In close, badly kept stables especially, where animals are crowded together, and cleanliness neglected; the malady may assume serious proportions by way of propagation at a distance.

The life of an animal, food supply, physical constitution, all indicates that the individual susceptibility of different animals even of the same species varies considerably.

Horse-pox happens in an epizoötic form, and though it may primarily appear in such a mysterious manner that its spontaneous origin has been accorded by several authorities as a fact, yet contagion plays an important part in its diffusion. The epizooties of horse-pox are not on a large scale, indeed it appears to be almost the least liable to spread of all the contagious diseases that affect animals.

Soiled forage, close proximity to the diseased, actual contact with the affected parts, stable implements, conveyance of the virulent element by the hands of grooms, farriers, dairy-maids, etc., lying on the same ground or in the same stall, are all sources of extension of this malady.

We do not know the incubatory period of spontaneous, or rather accidental horse-pox. The incubation, however, of the inoculated disease is from five to eight days.

Though we have no positive facts that one attack confers immunity from another, yet presumably from what occurs with the variolæ of other animals, there is every probability that the horse can only, as a rule, experience one invasion of the malady.

The diagnosis of this disease is important, as there can be little doubt that in one or other of its forms it may and

has been mistaken for glanders or farcy, and as I shall endeavour presently to show, approaches closely in some respects to other diseases of a constitutional or local nature. Dr. Edgar Crookshank, M.B., when reading a paper before the Midland Branch of the British Medical Association held at Birmingham, 14th June, 1888, when alluding to some of the communicable diseases of man, and the lower animals, said of cow-pox and horse-pox—"Jenner was the first to describe the disease which had from time immemorial been known in the dairy counties as cow-pox, and his publications led to a careful study of the diseases affecting the teats of cows. I need hardly say that, as this disease is one of the sources of lymph employed for affording protection against small-pox, it is of immense interest and importance. It is therefore much to be regretted that the clinical history of the natural disease in the cow has been until recently so much neglected in this country both by the veterinary profession and our own, It is commonly supposed that cow-pox and horse-pox have been absent from this country during the long period succeeding the outbreaks described by Jenner, Ley, Ceely, and Estlin, but inasmuch as outbreaks have been comparatively common during this period in other countries, it is far more probable that outbreaks have occurred in England, but have been overlooked or wrongly diagnosed." I have a reply to make to this statement presently. From personal observations of horse-pox in horses in England, in no less than three cases—two, typical in every respect, as far back as 1883, and one in 1887, from which inoculation of the virus in a donkey reproduced the salient and distinctive characters of horse-pox. I hope to be able to show that my diagnosis of the case, viz., that of "equine variola," was justifiable.

Our greatest authority on horse-pox, Dr. George Fleming, C.B, in an able *résumé* read before the Southern Counties Veterinary Medical Association last year, stated that "In this country strange to say, it has seldom been reported, though as to its existence there can be no doubt whatever, and it may be more common than is imagined because it is generally such a mild disease that the Veterinary surgeon's attention is not likely to be directed to it, and probably would fail to recognise it if a case were brought before him." I believe I am correct in stating that at the beginning of last year, Prof. Axe saw several cases of equine variola among horses admitted to the Royal Veterinary College Infirmary, and inoculated calves with the lymph from the diseased, with marked and characteristic success.

In character it is an eruptive vesico-pustular malady, the eruption being preceded in the majority of cases by a degree of fever so slight as to be almost imperceptible. The eruption may appear on the skin in different regions, or over the whole of the body; on the nasal, or buccal membrane, and exceptionally, on the conjunctival membrane of the eyes. It most frequently appears on the skin, and is most liable to become confluent, towards the lower extremity of the limbs, and inferior parts of the head. The nasal eruption, is nearly always accompanied by similar outbreaks in the nostrils and lips. It not unfrequently appears as an epizoötic form. Three or four days before the eruption shows itself there is a more or less slight amount of feverishness, with diminished appetite and increased thirst. When the integument is to be the seat of eruption, the earliest manifestation is observed in those parts of the skin is a vesicle which soon becomes a lenticular prominence which, when felt between a raised fold of skin, gives the sensation of an indurated nodule. Becoming more developed it assumes the shape of a disc, depressed in the centre and raised at its margin, whilst its colour is bluish-grey, surrounded by a bright-red areola. Where the skin is stained with pigment of course the changes in colour are not noticeable, though the pustule has the same umbilicated appearance, and the tint is a little brighter around its circumference than the other parts of the integument. This feature in the eruption of horse-pox, is characteristic of the variolous pustule in all creatures. In three or four days the pustule begins to become flattened, and the epidermis thickened and dry, forming a crust standing above the level of skin; and black, grey, or yellow in colour, according to the nature of the integument. For three or four days after the umbilicated disposition has disappeared from the pustule, the deeper suface of the crust remains very moist; and the mass is easily detached, leaving a small circular and finely granulated red or grey-coloured sore, depressed in the centre, and from which exudes an abundance of very limpid citron-coloured serum. When this exudation diminishes, it forms a yellow irregular crust, slightly adherent to the surface of the wound, and beneath which a certain amount of serum yet continues to be secreted. Towards the eighth or ninth day after the formation of the papule the exudation has greatly subsided. Should this crust not have been forcibly detached cicatrization ensues without suppuration, the crust remains firmly attached to the epidermis until about the 15th to the 20th day, when it separates, leaving a little depression through which appears the rose-tinted corium.

In this natural desquamation the crusts are essentially formed by the epidermis, consequently there is always observed a tuft of hairs implanted in this mass; but if cicatrization of the pustule does not occur, until after the epidermic layer covering it has become detached, as happens when the eruption is very confluent, and the crusts, instead of remaining adherent, are softened and destroyed. The purulent secretion succeeds that of a greasy nature, to which the malady has, at times, owed its common but erroneous designation. Each pustule in this case becomes pyogenic, and in a period varying with the region and the multiplicity of the eruption on a circumscribed surface, it is covered by a crust, formed partly by the fluid it secretes, and partly by the superficial layer of the granulations. It is beneath this closely adherent crust that the work of cicatrization gradually proceeds from the periphery towards the centre.

When the eruption takes place on a surface exposed to friction, or other external violence—as may be the case between the lips, where the pustules are often irritated and broken by contact with hard fibrous wood, or the bridle-bit—the lymphatics frequently become inflamed and multiple abscesses form along their course, with tumefaction in the glands to which they pass. In such cases the pustules are confluent, they soon coalesce from ulceration, thus constituting a large sore with an indurated base that so closely resembles farcy as to have been, and to be even now, frequently mistaken for it. More especially is this likely to be the case when the lymphatic glands and vessels are inflamed consecutively to the ulceration of the pustules, and abscesses form along and in them.

Though these pustules of horse-pox usually resemble each other in shape, no matter on what part of the body they may appear, yet they differ in size according to the regions they may occupy. Generally those on the trunk are the smallest and most disseminated, so that their presence is readily overlooked if a visual examination only is made, though nearly always their whereabouts is betrayed by the little erect tufts that mark their existence. Touch enables their location to be at once ascertained. On the fine skin covering the inferior extremity of the head, on the muzzle around and between the nostrils, on the lips and cheeks, the pustules are usually the size of large and small peas, which they still more closely resemble in shape and colour when the epidermis begins to dry on their surface. Their eruption

in these situations is very frequent; sometimes they are discrete, at other times confluent. It is on the lower part of the limbs from the knees and hocks to the feet, especially the posterior limbs and more particularly in the hollow of the pastern, that the so-called "Grease" pustules are most numerous and largest in dimensions; and the complex phenomena by which their presence is characterised readily explains why they were for so long a period, and are still, confounded with the non-specific disease of the skin of this part, vulgarly called "Grease." As the result of the movement, when the eruption is about to appear, the inferior part of the limb becomes tumefied, and painful to the touch. If the skin happens to be destitute of pigment it is speckled with bright-red patches, each of which becomes raised, and develops a pustule that passes through the phases already indicated. If the hand is passed over the skin of the limb at this period a multitude of nodosities closely packed will be immediately perceived. When these nodosities have matured into pustules, and simultaneously reached their period of secretion, the skin as far as the eruption extends appears to be transformed into a kind of sieve, by the opening through which the limpid, slightly citron-coloured fluid, pours in abundance. At the same time the hairs stand bristling up from their inflamed base, and becoming agglutinated, allow the fluid part of the serosity to drop from the ends of the tufts; they thus become the most concresible portion of the discharge, forming a vesico layer on the surface of the skin, and concealing more or less the character of the eruption. This abundant discharge from the pustules on exposure to the air rapidly decomposes, and emits a very marked ammoniacal odour—another circumstance which leads to the disease being mistaken for "Grease."

Such are the different forms the eruption assumes on the skin. Everywhere the pustule has the same characters, and passes through the same phases, but when it forms part of a close cluster, the abundance of the fluid which bathes it prevents its cicatrization in the manner described, for at an early period it loses its epidermic covering and exposed tissue becomes pyogenic.

The buccal eruption of horse-pox is, in its simplest form, at first characterized by the presence on the lining membrane of the mouth of small vesicles about the size of a pea, some circular, others elongated, and whose rosy opaline tint, contrasts markedly with the bright-red hue of the mucous membrane on which they are placed. These vesicles are smooth on their surface, and do not show any central depression; in colour and shape they are not unlike pearls; to the touch they feel lumpy; and any pressure on them causes the animal pain. They may be confluent, or discrete, and are observed on the inner aspect of both lips, the inferior surface of the tongue and borders of its free portion, the inner face of the cheek, gums, commissures of the mouth, especially along the Whartonian ducts and their orifices. When these buccal vesicles are opened, either naturally or accidentally, there remain little round or lenticular sores, with sharply defined borders, finely granulated at the bottom, and deep-red in colour. Accompanying this eruption is a very copious salivation, and but a slight tumefaction of the submaxillary glands. The animal is a little dull, and eats with less avidity than usual, partly owing to the pain in mastication. It must be observed, however, that these symptoms are generally so slight as to attract little if any attention. It is very rare that the eruption remains confined to the mouth; in most cases it extends at the same time to the lips, end of nose, and around the nostrils, and this externally gives the disease a most precise character.

In other instances the eruption in this region coincides with the appearance of pustules of the same kind on the trunk, or concentrated on the lower part of the limbs. This coincident eruption is, of course, the expression of the same general morbid condition, but there are cases in which the eruption of the pustules in different regions at the same time is manifestly due to the successful inoculations the animal performs on himself. Thus a horse whose mouth is affected may easily transplant the virus by gnawing any part of the body which happens to itch; while another, which licks or bites a portion of the skin covered with mature pustules may have its lips and mouth affected in consequence.

It is extremely probable that this equine malady is pretty generally diffused in the different parts of the world inhabited by the horse; the cow-pox which is held to be derived from it, being known both in the Old and New Worlds. It has, however, only been recognised and described in Europe within a recent period. England claiming the distinction of being the first to describe it and to indicate its relation to cow-pox, as well as its efficacy as a preventive from human variola.

The eruptive fevers of mankind and animals possess a special interest for the pathologist and sanitarian from the fact that many of them are fatal, and all are transmissible. The experiments of Loy went far to prove the existence of horse-pox in this country, for at the beginning of this century, after repeated failures to reproduce horse-pox by inoculation—no doubt from the fact that the material used was from cases of ordinary "Grease;" he fortunately met with a case in a horse when the exudata from the heels was much more limpid, and which was evidently horse-pox. The material was taken from the subject on the 14th day, that is the 7th of the discharge from the heels. Four cows inoculated with the material showed the usual symptoms of cow-pox, and a child also inoculated with it, on the 3rd day had a papule surrounded by slight inflammation; on the 4th day the papule was very elevated, and on the 5th day there appeared a purple tinted vesicle, on the 6th and 7th the vesicle had increased, and was darker. Accompanying these changes there was fever, head-ache, quickened respiration, frequent pulse, white tongue, etc. which symptoms decreased towards the 9th day. On the 16th after inoculation from the horse, the child was inoculated with small-pox matter without result.

Loy recognised two kinds of "Grease," one merely local, and non-infective, the other local and constitutional (eruptive); the latter gave the disease to the grooms who handled the horses. Undoubtedly these latter cases were genuine horse-pox. With the first there was no general disturbance but with the second at the commencement the horses exhibited symptoms of fever, from which they were relieved as soon as the disease appeared at the heels, and there was an eruption on the skin. The fact that inoculation from "constitutional grease" is a protection from small-pox, and that the rather severe effects of direct transmission from the horse to the human species are modified by passing the virus through the cow, or through mankind were fully recognised by this enlightened observer, as well as the other important fact that the matter is only certainly effective when perfectly limpid, which is at an early stage of the disease. To this observer it was remarked, that neither the original nor the communicable disease was infectious through the medium of the atmosphere.

The term "grease" is very misleading, and was the cause of horse pox being overlooked, and indeed altogether ignored, for some considerable time. In 1805 Viborg, of the Copenhagen Veterinary School, inoculated a cow with matter from the heel of a horse affected with specific form of so-called grease. On the 5th or 6th day, on the udder and teats were bright transparent vesicles, with the characteristic areola and umbilicus of cow-pox, and the cow exhibited a high degree of fever, while the secretion of milk was nearly suspended. In 1830 Hertwig and 11 students of the Ber-

lin Veterinary School became inoculated through handling horses affected with horse-pox, as affecting the limbs particularly. This form as an epizoöty was then prevailing largely in North Germany.

Delavond, in 1840, observed an outbreak among horses in France, undoubtedly horse-pox. In 1843 Bouley saw another outbreak; neither, however, recognised it as such, and it was not until a regular epizoöty of the disease appeared at Ricumes, near Toulouse that serious attention was directed to it. Lafosse, of Toulouse, deeming at first the epizoöty was only "grease," fortunately inoculated a cow in order to submit the Jennerian doctrine to an experimental test. The experiment was made eight days after the manifestation of the eruption in the mare, and was perfectly successful. Papules, then pustules were formed on the cow wherever the matter obtained from the mare had been inserted with the lancet; large, firm, and round pustules, with a central umbilicus which caused the borders to appear raised. They were the vaccine vesicles intact. Another cow was inoculated from this one, and had a very fine cow-pock from which a child was vaccinated; also a horse, and these had a magnificent vaccinal eruption. A second child inoculated with the matter from this horse had, in its turn, a well-developed pock.

Comparative inoculations were then made on children and horses with the equine virus, and the ordinary humanized vaccine, and it was found that the former produced larger, and firmer pustules than the latter, though the evolution was slower—a point worthy of note. Bouley, then Chemical Professor at Alfort Veterinary School, not quite satisfied with what had been done in this direction by Lafosse and others, resolved to inoculate cows with all the eruptive maladies of the horse which his daily routine of professional duty brought before him, and singular to relate the very first case (1863) was a successful one, and produced a beautiful cow-pock.

Since 1864, when the exact nature of cow-pox was for ever settled by the observations and experiments of Bouley and others, no doubt has existed in the minds of those who have carefully studied the history of the disease that horse-pox and cow-pox are as like each other as it is possible, so far as the results of inoculation are concerned. But the two diseases appear to be perfectly independent of each other in their origin; for cow-pox appears where there is no horse-pox, or possible contact with horses, and where the men who attend upon them do not milk cows. It has been frequently observed that horse-pox prevails on a farm or in a locality, and no cow-pox is seen there; while cow-pox may affect a number of cows in a dairy, and the horses be entirely free from horse-pox.

Human small-pox inoculations on the horse are either negative, or nearly so; the positive results yeilding only the most trifling evidence of infection, and nothing at all like horse-pox being ever produced from the insertion of small-pox virus into the skin of the horse; while retransmission to mankind only gives rise to small-pox.

But horse-pox inoculated on the cow produces what in every respect corresponds to cow-pox, or on man to vaccinia.

From the cow and man horse-pox can be transformed indefinitely, and while its action is somewhat modified by numerous transmissions, its protective influence against variola is undiminished. This has been demonstrated times without number, since the time of Jenner up to now.

Human variola cannot be converted into cow-pox, though for nearly a century it has been stated by the highest medical authorities that cow-pox is simply small-pox, modified by its passage through the cow. The inoculatory experiment I had an opportunity of performing, and with success, was with lymph taken from a vesicle situated on the trunk of a black mare aged seven years, and in which horse-pox presented some well marked and interesting features of development. The subject selected was a donkey, and having shaved off the hair from the point of elbow backwards, along the ribs to about the eighth, I inserted lymph taken from a mature vesicle of the black mare, by puncture, and by scarification and well rubbing in: and was rewarded by the appearance, on the 5th and continuous to the 8th day, of upheaval of the epidermis at the seats of the respective inoculations, redness of skin, and characteristic formation of papules; these increased in size until about the 10th day, when they became acuminated, had a very brown base, and were hard and painful to the touch. On the 13th day the eruption extended, or rather appeared in the mouth. The temperature reached 103·6°; pulse 51 per minute; respirations 22 per minute. The papules had now become vesicular, several from being discrete had become confluent, and a few assumed a pustular character, and denudation of hair from trunk superiorly, and where the eruption was great, took place. Appetite decreased, languor ensued, disinclination to lie down continued for several days; slight salival discharge, viscid, and inclined to adhere to the lips. These symptoms increased but little up to the 20th day, when a gradual desiccation of pustules, and desquamation changes were accomplished. This experiment convinced me of the exact nature of the affection witnessed in the mare.

(To be continued).

EXTRACTS AND NOTES.

THE IDENTITY OF COW-POX AND SMALL-POX.

The contrariety of opinion as to the identity of these two eruptions appears to have been settled by a series of experiments on calves and sheep undertaken by Eternod and Haccius, of Geneva. A small surface of skin is thoroughly cleansed and rubbed with sandpaper, until slight bleeding occurs, when virus from human small-pox pustules is rubbed in with a spatula. The eruption produced consists of a few pustules, but they are neither those of the true small-pox nor those of the true vaccin pox. This altered character explains how former experimenters have insisted on the duality of these eruptions. When, however, the virus from these first pustules, by the same process of skin denudation and vaccination, is applied to calves, this second passage through the bovine system modifies and attenuates the small-pox virus, and typical vaccin pox is developed, and has been continued to be reproduced by these experimenters up to the fourteenth generation. The third generation of pustules raised from human small-pox virus were, it is stated, indistinguishable from those induced by the inoculation of vaccin. Although this process of denudation and inoculation of small-pox virus never failed to produce vaccin pox in cattle and sheep, the old method of incision or puncture proved uncertain, and had negative effects in horses, in which it is believed, however, that the eruption might be produced by the same methods as are successful in calves and sheep.—*North Brit. Agriculturist*

The Vitality of Seeds.

Mr. W. Cramond, of Cullen, writing to *The Scotsman*, gives the following interesting account of experiments with seeds:—"No one now believes the story of mummy wheat, the tendency being rather to contract too much the period of vitality of seeds. Can any of your readers furnish so clear a proof of the prolonged vitality of seeds as the following:—About the year 1841 a box in appearance like a meal girnal was filled with the private papers of Mr. P. Rose, Sheriff-Clerk, Banff, and deposited by his representatives in the Town House of that burgh, where it lay unopened, until, about eighteen months ago, the Sheriff-Substitute of the county, on the application of Mr. W. Rose, Australia, granted an order to unlock the box. I was permitted to examine and report on the contents. Among these was found a paper addressed to Captain Rose, dated 'Brighton-place, Portobello, April 10, 1826,' with the following note:—'Directions for sowing locust seeds.—The seed should be first steeped in warm milk (about the temperature of 160 degrees) for four and twenty hours The proper time for sowing them in this country is about the end of April, and the soil should be sandy loam.' Along with these directions were a number of seeds. Mr. Smith, head gardener, Cullen House, received some of tbe seeds, and carefully carried out the instructions, the result being that one of the seeds germinated, and grew to a height of about half an inch, when it withered away. These seeds were certainly fifty years of age, for the box was locked all that time, and there can be little doubt that their actual age was at least sixty-five years. The contents of the box were perfectly dry, and practically air-tight, for some 40,000 letters and papers were crushed into the box."

Arsenic-poisoning in Madras.

From the report of the chemical examiner of Madras *The Madras Times* quotes certain interesting facts. During the year 1890 the examiners' duties included the investigation of 116 cases of suspected human poisoning. in 76 of which the poison was detected. Of these, inorganic poisons were found in 59 and organic poisons in 17. Arsenic was more largely employed than any other poison. The chemical examiner reports: "The physical properties of common white arsenic are all in favour of its easy administration: its action is rapid and certain; its effects strongly resemble a fatal disease which is of frequent occurrence in this country; it is procurable with the greatest ease in every bazaar; and so this substance continues to be the favourite weapon of the poisoner. The number of cases of suspected cattle-poisoning examined was 54. Poison was detected in 45 cases, and arsenic was the agent used in no less than 43 of these.

Experimental Malarial Infection in Man and in Animals.

Professor E. di Mattei describes, in the form of a preliminary note (*Riforma Medica*, May 30th, 1891), some attempts to modify the course and character of an ague of a given type by intravenous injections of blood from a patient suffering from another type of the disease. He also describes some experiments which were made with a view of studying the mode of spread of malarial disease in pigeons, and its relation to similar diseases in the human subject. His more important conclusions may be summarised as follows: (1) In man, after intravenous injection of blood containing a well-determined variety of malarial parasite, not only is malarial infection constantly reproduced, but the type of the disease corresponds exactly to that from which the injections were made. This would strengthen the view that a given parasite will always be associated with a certain definite febrile cycle. (2) In pigeons (*a*) the parasites of the blood are never reproduced in whatever manner the inoculations may be made; (*b*) the character of the temperature curve gives no positive information as to the existence of a particular parasite in the blood; (*c*) cohabitation and reproduction are not means of infection; (*d*) therapeutic measures applieable to the disease in man are useless in the case of pigeons; (*e*) lastly, it is not possible to produce infection in man by the blood of a malarial pigeon, or *vice versâ*

Sprat's Sanatorium for Dogs.

As an evidence of the increasing attention and forethought given to the care of domesticated animals the notice issued by Spratt's Patent is worthy of note. It is addressed to that section of the public leaving London for the usual Autumn holiday, inviting them to "entrust their Canine Pets as Boarders to Spratt's Patent Dog Sanatorium. The Sanatorium is on a healthy site near Mitcham. The kennels are large and spacious. The dogs are well groomed and exercised for several hours daily, and above all are not caged or chained. Mr. Sewell, the Veterinary Surgeon (Canine Specialist) supervises all.

ELECTRICITY IN CANINE PRACTICE.

The apparent belief of J. B. T. in the efficacy of the electric belt in the case he records in last week's *Veterinary Record* will doubtless surprise more than one canine pathologist unless some further and satisfactory explanation is forthcoming as to the methed by which the electric current was introduced.

Some years ago I had several interviews with a leading electrician in London, concerning the manufacture of canine electric appliances, in the shape of belts, collars, jackets, &c., but the coat of the animal, unless removed, was found to be an insurmountable obstacle to success, and I venture to assert, with all due courtesy to J. B. T. that unless the loins were shaved or absolutely devoid of hair, or subcutaneous penetration resorted to, in the case recorded by him, the electric belt had no part in the cure effected, Electricity, however, can be applied in canine practiee with immense benefit.

WOODROFFE HILL, F.R.C.V.S.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. W. A. Dellagana, H. G. Rogers, F. L. Gooch, J. Neild, F. Raymond, Woodroffe Hill, "American Veterinary Review," "The Journal of Comparative Anatomy."